

REMARKS

Claims 1-5 are pending in the application.

Rejection under 35 U.S.C. § 103(a)

Claims 1-5 stand rejected under 35 U.S.C. § 103(a) as being obvious over U.S. Patent No. 6,060,573 to Konig et al. (hereinafter "Konig") taken in view of U.S. Patent No. 5,688,890 to Ishiguro et al. (hereinafter "Ishiguro"). The Examiner suggests that Konig discloses the presently claimed polyurethane stoving coating composition except for the claimed tetravalent titanium compounds and that it would have been obvious to use the tetravalent titanium compound disclosed in Ishiguro in the coating composition of Konig in order to impart excellent moldability and uniformity. Applicants respectfully disagree.

Applicants discovered a one-component polyurethane coating composition mixture having sufficiently good crosslinking at a stoving temperature of 90°C/30 minutes. The inventive polyurethane stoving coating composition includes a polyisocyanate blocked with a CH-acidic ester, OH-containing polymeric compound, and a tetravalent titanium compound. Applicants have found that the presence of the tetravalent organic titanium compound as catalyst provides for stoving temperatures of less than 100°C, which was a problem in the prior art (page 1, lines 24-28 of the specification).

Konig discloses a blocked polyisocyanate which has isocyanate groups blocked with CH-acidic esters, a content of blocked isocyanate groups, and a content of formaldehyde. The blocked polyisocyanates are used in one-component polyurethane stoving compositions, which may be cured at relatively low stoving temperature of about 100°C, as crosslinking agents for organic polyhydroxy compounds.

Ishiguro discloses a thermoplastic polyurethane composition that includes a thermoplastic polyurethane and a tin compound. The thermoplastic polyurethane composition is produced by the successive steps of obtaining a polymer diol by polymerization in the presence of a titanium-based esterification catalyst, decreasing the activity of the titanium-based catalyst contained in the polymer diol, and

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polymerizing the polymer diol, an organic diisocyanate and a chain extender in the presence of a tin compound (col. 11, lines 18-24). The titanium-based catalyst is deactivated with water at a temperature of from 70° to 150°C (Col. 6, lines 27-48).

When combining references, the burden is on the Examiner to show some motivation in the cited prior art to modify the primary reference with another reference. The Examiner's suggested motivation is that one skilled in the art looking to provide coating composition with excellent modability and uniformity would be motivated to use the tetravalent titanium compound disclosed by Ishiguro because at col. 6, lines 45-53, Ishiguro discloses using titanium catalysts at a preferred temperature range of 90°C to 130°C.

However, the Examiner is mistaken in asserting that this disclosure has anything to do with how tetravalent titanium compounds are used in the claimed invention. In the claimed invention, the tetravalent titanium compounds are used to catalyze coating compositions to effect reaction at temperatures as low as 90°C or 85°C (see page 2, lines 15-22 of the specification).

In Ishiguro, the titanium compounds are used as catalysts for making polyesterpolycarbonate diols (col. 4, line 46 to col. 5, line 8). The titanium compounds are then deactivated before reaction with a diisocyanate in the presence of a tin catalyst. Thus, Ishiguro discloses the use of titanium compounds as catalysts for esterification reactions and not as an active component of a one-component polyurethane stoving coating composition as in the present invention.

The combined references therefore suggest using a tin compound as a catalyst to form a polyurethane and not a tetravalent titanium compound as used in the present invention. There is no suggestion or motivation in Konig and/or Ishiguro to do otherwise. One skilled in the art would not use titanium compounds as catalysts in the polyurethane stoving compositions of Konig, because Ishiguro only discloses their use for catalyzing esterification reactions. Therefore, there is no indication for successfully making the combination to meet the goals of the invention.

As the combined references do not teach, or in any way suggest the present invention, the rejection of Claims 1-5 under 35 U.S.C. § 103(a) should be withdrawn.

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Conclusion

Based on the foregoing discussion, Applicants assert that the application is in form for allowance.

In view of the above amendments and remarks, reconsideration of the rejections and allowance of Claims 1-5 are respectfully requested.

Respectfully submitted,

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